

Abstract Submitted
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Degradation Studies of Polymer Blend Photovoltaics¹ BRIAN JOHNSON, ENAANAKE ALLAGOA, ROBERT THOMAS, GREG STETTTLER, MARIANNE WALLIS, JUSTIN PEEL, BRIAN MCNELIS, RICHARD BARBER, Santa Clara University — We have measured the time dependence of device performance for photocells using blends containing the conjugated polymer, Poly[2-methoxy-5-(2-ethylhexyloxy)-1,4-phenylenevinylene] (MEH-PPV) with different functionalized C₆₀ electron acceptor molecules: commercially available [6,6]-Phenyl C₆₁ butyric acid methyl ester (PCBM) or [6,6]-Phenyl C₆₁ butyric acid octadecyl ester (PCBO) produced in our laboratory. Performance was characterized by the maximum power output of the devices, with the time dependence typically following an exponential decay. Variations in the characteristic lifetime of the devices were observed to depend on the molar fraction of the electron acceptor molecules (calculated with respect to the MEH-PPV monomer fraction). Differences in the decay behavior between the PCBM and PCBO blends will be presented.

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